ANNEX 12B: PROFILE OF KYAUNG TAUNG CLIMATE SMART VILLAGE

International Institute of Rural Reconstruction;

;

IDRC Grant/ Subvention du CRDI: 108748-001-Climate and nutrition smart villages as platforms to address food insecurity in Myanmar

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security CCAFS

IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

IIRR

CLIMATE SMART VILLAGE PROFILE

Kyaung Taung Village

Nyaung-Shwe Township, Shan State

Introduction

Myanmar is the second largest country in Southeast Asia bordering Bangladesh, Thailand, China, India, and Laos. It has rich natural resources – arable land, forestry, minerals, natural gas, freshwater and marine resources, and is a leading source of gems and jade. A third of the country's total perimeter of 1,930 km (1,200 mi) is coastline that faces the Bay of Bengal and the Andaman Sea. The country's population is estimated to be at 60 million.

Agriculture is important to the economy of Myanmar, accounting for 36% of its economic output (UNDP 2011a), a majority of the country's employment (ADB 2011b), and 25%–30% of exports by value (WB–WDI 2012). With abundant land, water, and cheap labor, agriculture is a major driver of the Myanmar economy. However, only about 18% of the country's total land area of 68 million hectares is used for crop production and only 18.5% of this is irrigated. This leaves significant room for expansion in this sector.

Climate change is an established phenomenon in Myanmar, evidence shows an increasing temperature over time. Based on the country's experience, adverse impacts of climate change areincreasing incidence of drought, flooding due to heavy rains, stronger cyclones, and salinization of farms in the delta region. As an agricultural country with a large percentage of smallholder farmers, Myanmar's food security, nutrition, and livelihoods are bound to be greatly affected by the threat of climate change. In 2016, the Myanmar government launched the Myanmar Climate Smart Agriculture Strategy to serve as the country's directions towards building resilience in agriculture. A key component of the strategy is the promotion and practice of community-based approaches achieving climate resilience in agriculture.

With support from IDRC and CGIAR global research program climate change, agriculture and food security (CCAFS), IIRR and its local NGO partners is implementing climate smart villages (CSV) to demonstrate community-based adaptation in agriculture in different agro-ecological zones in Myanmar. This document is the result of a desk research that IIRR commissioned to develop profiles of each CSV in the project. The purpose of this document is to provide the reader background information as to the agriculture, livelihoods, nutrition, gender and climate change context of each CSV.

Poverty

About 25 per cent of the population was estimated to be living below the poverty line in Shan South which is comparable to the national average (26 per cent) (UNICEF). Rural Poverty Incidence of Southern Shan is 31.2% which is relatively higher than Urban Poverty incidence (8.3%) (ADB, 2012).

Climate Profile

NyaungShwe Township has lower temperatures compared with other parts of Myanmar. It tends to be around 27 Degree Celsius as maximum generally and 30 Degree Celsius is seldom to

Basic Village Profile of KyaungTaung Village

Name of Village	KyaungTaung
Name of Village Tract	Let MaungKwe
Name of Township	Nyaung-Shwe
Households in KyaungTaun village	83
Total Population in KyaungTaung village	355 persons
Female in KyaungTaung village	195
Male in Htee Pu village	160
Distance from NyaungOo airport to Htee Pu village	About 4 miles
Ethnic Group	Taung Yoe ethnic group (100%)

Source: Village Tract Administrator, Let MaungKwe Village Tract

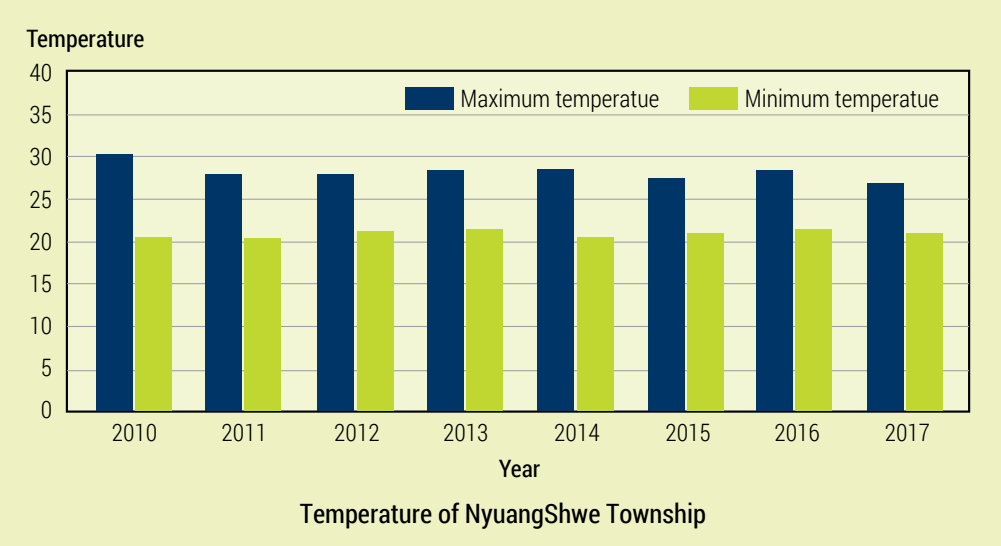
happen. The difference between maximum temperature and minimum temperature is low – about 6 to 8 degree even in comparison of temperature over 8 years (Figure.1).

Rainfall in NyuangShwe Township is erratic as in Dry Zone, but less erratic. Rainfall intensity changes about 10 inches – 15 inches in comparing among years , but it was surge increase with 20 inches in 2011(Figure.2)

The weather has become hotter and rainfall has reduced in recent years. Erosion has increased and soil fertility has been reduced. Their village suffered scarcity of water supply in the past years. This, according to local people, attributed to deforestation taking place in the hills. However, reforestation efforts is taking place, community forests have been developed at some villages, and rain water storage tanks have been constructed at their villages (UNDP, 2012).

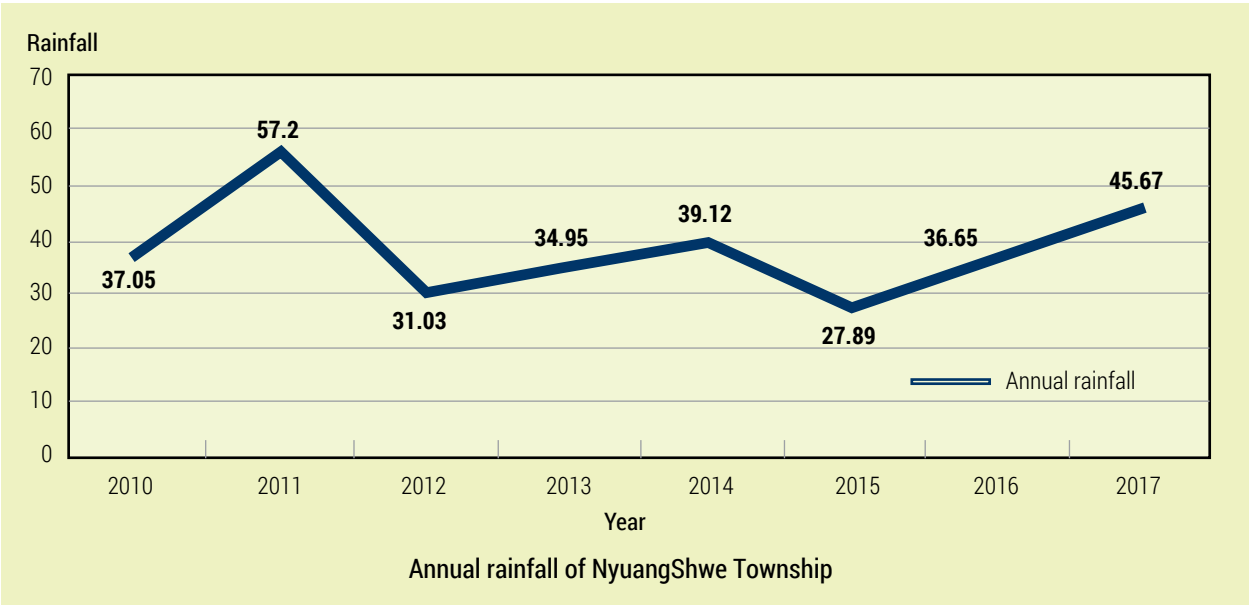
Villagers are facing increasing climatic extremes while exacerbate the existing weather conditions most notably the water scarcity during the dry season and reduced fallow periods.

Figure 1: Temperature Trend in NyaungShwe Township from 2010 to 2017.



Source: Department of Agriculture, NyaungShwe Township.

Figure 2: Rainfall Trend in NyaungShwe Township from 2010 to 2017.

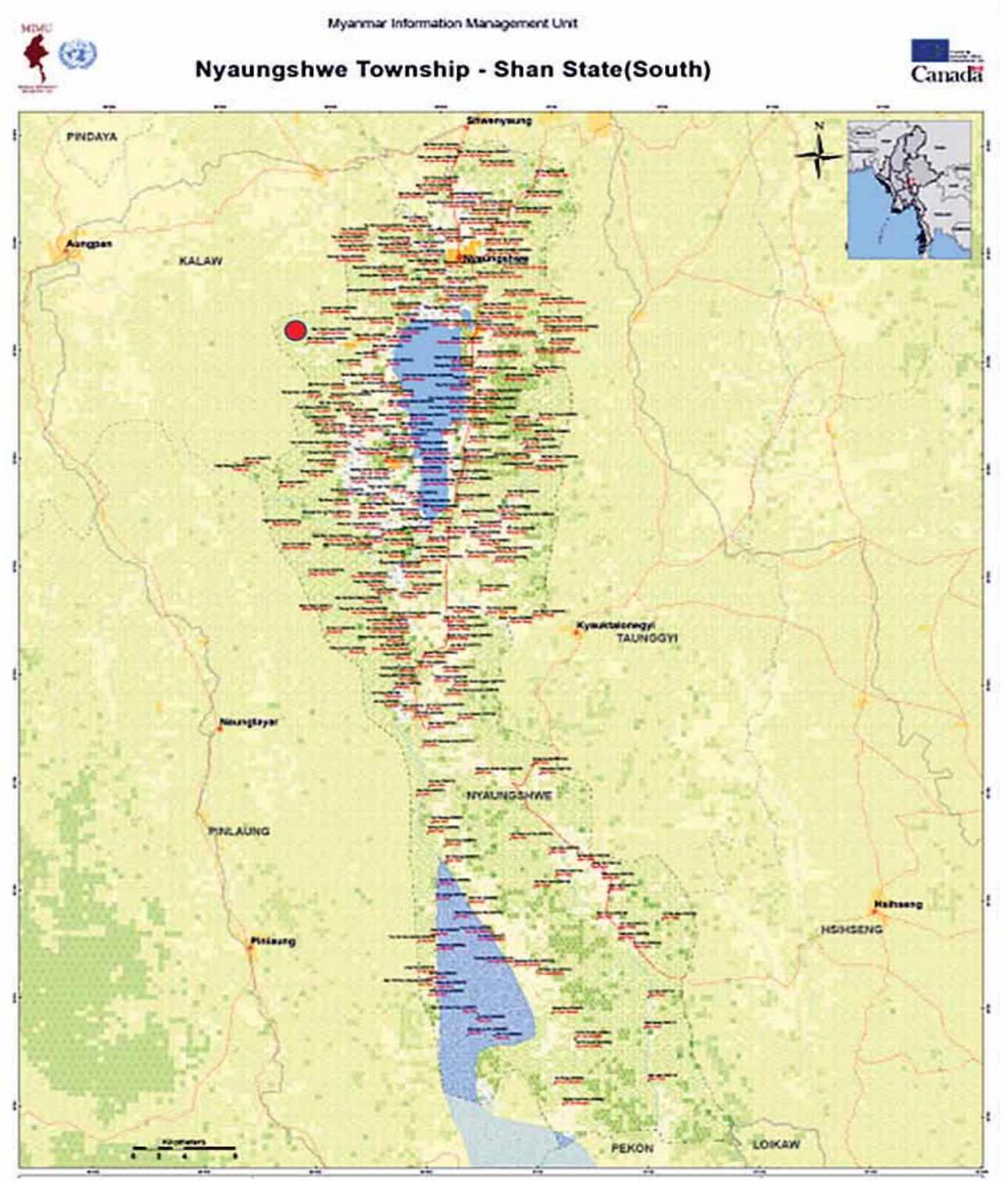


Source: Department of Agriculture, NyaungShwe Township.

Ecology of KyaungTaung

Hills dominate the topography with moderate to sloping conditions with scattered permanent vegetation. The natural forest only remains in small areas near the monasteries and other religious sites. Precipitation in Southern Shan rarely occurs in the dry season from November to March limiting cultivation options. The wet season commences in April, peaking in August and ending by November. The mean number of raining days is 119 annually (MIID, 2017).

The topography of the area is dominated by hills with moderate to extreme slope and scattered permanent vegetation indicating the significant environmental degradation in the past. Those hills were previously forested with native pine on the upper slopes and with mixed broadleaf forest



further down. Currently, bamboo is found in the home yards and surrounding the villages (Ko and Garcia, 2015).

According to the Department of Agriculture in NyaungShwe township, the soil type of KyaungTaung village is sandy soil. Soils are moderate to strongly acidic (pH 4.43-5.61), low to very low organic carbon content (0.081.55 %), very low to medium nitrogen content (0.1-0.23 %) and low phosphorus content (0.224.34 ppm). These traits indicate low fertility and challenges in terms of quality and quantity of crop production. Soil texture is predominantly silty clay, clay, silty clay loam, this substrate type exacerbated by low levels of humus (indicated by the low organic carbon) show that the soil is highly susceptible to erosion, and has low water retention (Ko and Garcia, 2015).

The soils of southern Shan state where KyaungTaung is located is characterized by red earth and yellow earth according to local classification. The soil is generally low base, low activity clay of red, brown or yellow in color. The limiting factors of these soils are limited depth, stone and rock presence, minimal water holding capacity, poor internal drainage, slow soil permeability, low fertility, low ration-exchange capacity, presence of toxic ions and absence of some nutritional elements (MIID, 2017).

Livelihood Profile of KyaungTaung village

In KyaungTaung village all households are engaged in agriculture (Village Tract Administrator). Farmers are a mixture of mixture of subsistence and commercial farming predominantly on sloping land (MIID, 2017).

There is no documentation as to the exact total land area utilized for farming as the entire village is classified by government as forest lands – hence no statistical data on arable lands (Land Settlement and Land Record Department (LSRD), NyaungShwe Township).

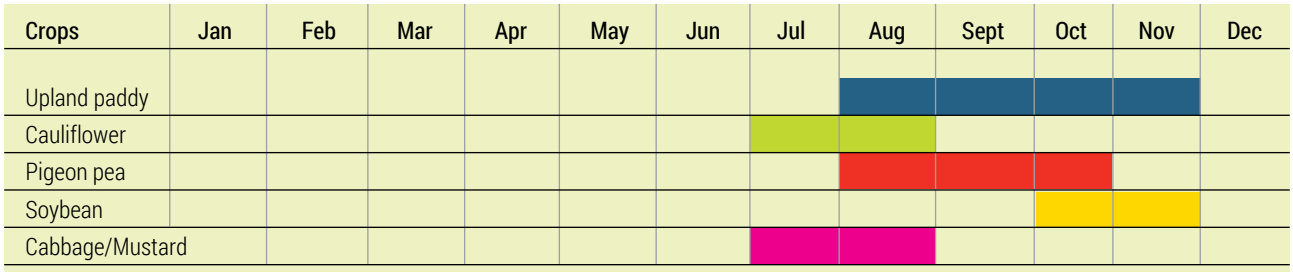
Farming is the main economic activity, based on rain-fed agriculture on sloping land where deforestation has occurred and there is not environmental protection to control soil erosion. The majority of households – over 70% – own less than 2 hectares, so they are categorized as small-holder farmers (Ko and Garcia, 2015).

All of the crops are grown in the rainy season because it is rain-fed agriculture in Let MaungKwe area. The growing season takes only 6 months as maximum in Pigeon Pea (Figure 3).

In general, a household farms taungya land (between 2 to 5 plots), with at least one portion dedicated to produce the staple food: upland rice, and the other(s) are kept in fallow (3 to 5 years). Farmers are engaged in a subsistence oriented agriculture system. Livelihood is the contribution of the diversification of productive activities within a limited access to land and water. Farmers produce mainly five groups of crops: cereals (upland rice, wheat and maize), oil seeds (groundnut and niger), pulses (pigeon pea and rice bean), spices (ginger and turmeric) and vegetables (butterfly bean, cucumber, cauliflower, chillies, tomato and mustard). The crop production intends to fulfil the household food security and also to obtain cash from the marketing of products (Ko and Garcia, 2015).

Water scarcity is one of the most significant factors hampering the opportunities of the community to assure their own food security and other aspects of their livelihoods. The shortage

Figure 3: Cropping Pattern of KyaungTaung Village.



Source: Village Tract Administrator, Let MaungKwe Village Tract.

during the summer season is dramatic for fetching drinking water due to distance and conditions of water availability (Ko and Garcia, 2015).

Villagers from KyaungTaung village are isolated due to poor accessibility through the two main existing roads, one connecting to Heho village tract and the other to NyaungShwe Township, both approximately 6 miles in distance from the villages.

The most frequented road links are those that connect toHeho and it can be used by motorcycles, bullock cart and trawlers. The other road connects to NyaungShwe Township, and it is mainly traversed on foot, because of the steep incline and poor conditions. Villagers use motorbikes to go to Heho taking 30 minutes. The time needed for transporting agricultural products to the 5 day market in Heho ranges from 1.5 to 2.5 hours depending of the means of transport either via bullock cart or trawlergy. For NyaungShwe it takes about 2 to 3 hours on foot. Poor infrastructure and lack of means of transport are some of the factors responsible for the isolation; lacking many services, like agricultural extension and trading are among other needs. This also hamper the access to technology, services and information in all aspects of livelihood (Ko and Garcia, 2015).

The risk of production is higher as land is less productive and extremely vulnerable to degradation. The majority of small holder farmers do not have linkages with mainstream markets and they relate almost exclusively to Heho market and/or traders. The high dependency on the local traders is due to the gap of farmers in understanding markets, their demands and the lack of negotiation powers for dealing with other actors of the chain. On the other side, farmers need cash in order to cover immediate needs (Ko and Garcia, 2015).

Farmers cope with such challenging context by employing strategies such as the diversification of activities in terms of types of crops/products. Productive systems, such as agro-forestry presents a wide range of options optimizing and protection resources (soil and water). Specifically, agro-forestry systems produce a wide range of products at different stratus: underground, small vegetation, medium vegetation (bushes) and higher vegetation (trees). Producing and harvesting different crops/products also leads all year round production (Ko and Garcia, 2015).

Farmers depend heavily on traders as a main source of market information. The farmers often check current prices during their visits the 5 day market. Relatives and neighbors provide information. Farmers have also shown more secretive attitude about the prices obtained. Some HH have mobile phone, though they rarely use it for obtaining market information from traders or other sources (Ko and Garcia, 2015). In terms of participation, it is a challenge for farmers to make their voice heard and to find a better position with the buyer-driven governance of the chain, as they are unaware of the market channels, requirements, and opportunities that the sector could offer them (Ko and Garcia, 2015).

There is a gap in the access to public or private extension services, which hasled to inappropriate cultivation practices and lack of information and knowledge in assessing risk, like pests and diseases. Farmers are unaware of the nutrients crop requirements and the grade of impact in the crop productivity. Farmers also lack knowledge of the dosage and the optimal application time. It is a general practice to apply complete fertilizer as basal fertilization in March-April with no soil moisture available. Additionally, there is a lack of knowledge of alternative fertilizers, due to the scarcity in the village and the hazard to transport to the farms (Ko and Garcia, 2015).

Volatile market prices make farmers reluctant to invest in case they end up in debt. Farmers are hurt by the high cost and inconsistent quality of fertilizer, seed and pesticide. Farmers are typically knowledgeable and make rational choices but have limited access to impartial information on new methods or the effectiveness of different inputs. Market information is generally available, with some specific exceptions in remote areas or where short-term fluctuations are impossible to predict. Limited access to affordable credit is a further major constraint for farmers and for farm-related businesses (Mercy Corps, 2015).

Other issues in these communities is the differential treatment of some minority groups, and a general lack of government support for rural households making most farmers cautious (conservative). The risks of crop failure that could lead to intractable debt or the loss of inherited

land are too great for many farmers to bear (Mercy Corps, 2015).

Many vegetable farmers in southern Shan State have been able to take advantage of the opportunities that new technologies (like hybrid seed varieties) and improved access to markets have generated since economic reforms in the early 1990s. Along with other farmers growing economically viable cash crops such as beans and pulses across central parts of the country, they are in a relatively strong position to benefit from modernization. Vegetable farmers have been able to define their own ways to grow and market produce effectively despite many constraint (Mercy Corps, 2015).

Land Tenure Status of KyaungTaung Village

KyaungTaung land are documented as forest land areas and hence, none of the villagers has land tenure documents. (Land Settlement and Record Department, NyaungShwe Township). This is major challenge for villagers in KyaungTaung.

Customary Land use practices remain common namely shifting cultivation (also known as slash and burn or swidden agriculture). Farmers utilize land and plots for a year or two before rotating to another plot to allow the land the land to fallow and rejuvenate. However, the number of years have reduced from an ideal eight-year rotations to three to five years. Seventy percent of households have access to less than 2 hectares of marginal and sub-marginal land per year (Ko and Garcia, 2015).

Nutrition

In Southern Shan, 18% of the children being underweight, 42 % of the children being stunted, and 5% of the children being wasting. Twenty-eight (28%) of the children aged 0-5 months are exclusively breastfed.10.3 % of children 5- 59 months never receive vitamin A (UNICEF).

Gender

In 2012, UNDP came out a report of the gender roles in the communities around Inle Lake, including the communities in KyaungTaung. In that report it noted 3 types of gender roles, which are socially determined, context specific, changeable (but also resist change). These are: Productive, Reproductive; and Community Management. Productive Roles refer to work undertaken by men and women in exchange for cash or in kind. Reproductive Roles relate to issues of child bearing and rearing. It also involves all tasks undertaken to reproduce the human capital such as cooking, cleaning, looking after the sick and aged. Community Management Roles are activities undertaken by men and women to provide for and maintain the scarce resource of collective consumption. Examples include building communal markets, schools, clinics, etc., on a voluntary, unpaid basis. For women, this is seen as an extension of their reproductive role. Tool 1 of Harvard Framework was applied for this purpose (UNDP, 2012).

If the land is inherited from the wife's side, then control of the land is with the wife; it also holds

Table.1: Perceived daily activity profile (average and range of time in hours), spent by each Sex Group (Taung-yoe).

Role	Perceived Average (and Range of) time spent by each Gender Group, in hours	
	Men	Women
Productive	8.75 (7.5-10.0)	10.5 (10.0-11.0)
Reproductive	4.0 (3.0-5.0)	1.5 (1.0-2.0)
Community Management	1.0 (1.0-1.0)	1.75(1.0-2.5)
Leisure Time	2.25 (2.0- 2.5)	3.0 (2.5-3.5)
Sleeping Time	8.0	7.25 (7.0-7.5)

Source: Gender Analysis at Inn Thar, Pa-O, Da Nu and TaungYoe Villagers around Inle Lake (UNDP, 2012).

true for the husband if the land of a family is inherited from his parents' side. As for what kind of plant to grow on the land owned by a family, a decision is made after discussing between the wife and husband. In case there are differing opinions, the husband's choice is said to be the final. This shows that the level of control by men. Key decisions relating to buying or selling equipment are made by husbands. Though it does not provide clear indication of who controls labour involvement among family members, it also seems to be under the control of men taking into consideration of the role men are playing as heads of household (UNDP, 2012).

All the earnings (cash) of men are given to their wives and kept under their control. For the family, women could make free decisions to spend the money for daily family needs of small scales. For expensive investments, husbands make the final decisions. However, husbands are said to be willing to give preference to their wives' needs. All women and men nowadays access education. Educational achievement of children is highly supported by parents. There were differing views given as regards control of education of the children. One view was that there was no discrimination of gender as regards whom to pull out of school if it becomes a necessity. The eldest child will be taken out of school irrespective of the gender, and will be used to work in the field. Another view was that a girl will be taken out because a boy, after becoming an educated person, could travel to any part of the country to search for work. (UNDP, 2012).

As for health care, both women and men have equal access, and they could make their own decisions for taking treatment. Marriage takes place among girls at ages around 20 and is becoming higher these days. Birth spacing is practiced by most of the wives, and even some wives are practicing it without the knowledge of their husbands according to surveys. Men play the leading roles in community matters, because "there is no tradition that women lead at their villages". Another problem is that most of the community meetings take place at night times and women dare not go out at night time. During construction of UNDP water storage tanks at their villages, both women and men contributed labour in the work with full motivation. They did not consider it as wasting their time. Because of these tanks, water problem has been solved to some extent, but not yet fully solved (UNDP, 2012).

Women plough soil like men though this is considered a tough task for women at Taung-yoe villages and are "traditionally not a job for Taung-yoe women". In spite of key roles being played by women in agriculture-related livelihood activities, there is an unequal wages between women and men. This is due to lower position of women in the society and this situation is seen in cross ethnicity context (UNDP, 2012).

Table 2: Reproductive Function and Gender Role of TaungYoe people.

Reproductive Function	Gender Role
Fetching water	Women, girls, men, and boys
Searching firewood in the forest	Both women and men
Cutting firewood at home for use as fuel	Men
Preparing food and cooking	Women. Sometimes men also do cooking.
	"Women are so careful not to make wastes, so they do cooking at houses. Men do cooking during festivals because they can spend all the necessary cooking requirements in any way they like" (all the interviewees saying laughing)
Child caring	Women
	The interviewees said that women are more patient than men in taking care of children.
Taking care of an ill family member	Women (and men take the responsibility when their wives are sick

Source: Gender Analysis at Inn Thar, Pa-O, Da Nu and TaungYoe Villagers around Inle Lake (UNDP, 2012).

Table.3: Access and Control in TaungYoe People.

Resources and Benefits	Access		Control	
	Women	Men	Women	Men
Resource- Land				
Equipment				
Labour				
Cash				
Education/ Training				
Health				
Benefit (Outside Income)				
Asset Ownership				
Basic Need (food, clothes, shelter)				
Education				
Political Power (Community Level)				

Source: Gender Analysis at Inn Thar, Pa-O, Da Nu and TaungYoe Villagers around Inle Lake (UNDP, 2012).

Table 4: Implementing INGOs and NGOs in KyaungTaung Village.

No.	Name of NGO/ INGO	Implementation Activity	Implementation Period
1	MIID (Myanmar Institute for Integrated Development)	• Bamboo Value Chain: Bamboo Handicraft from Let MaungGwe	2014 March – 2017 Oct
		• Ginger Value Chain	
		• (Community Forestry Development	
		• Farmer Field School	
		• Agro Forest plants support	
		• Rain Water Harvesting Tanks and Collection Pond	

Source: HIMALICA project, MIID.

Men are found to be involving less in reproductive role, and are enjoying more in leisure but less sleeping times. Women are spending less time for community management (UNDP, 2012).

Support Programs in KyaungTaung

The Department of Agriculture is implementing the soil conservation project delivering the tea plants, avocado plants, mango and dragonfruit trees in KyaungTaung village.

There are also INGOs and local NGO programs that provide support for the needs of KyaungTaung (Table 4).

References

1. MIID (2017). Agro Ecology Case Study: Addressing the challenges of Upland Farming in Southern Shan State for Climate Resilience.
2. Lwin, K and Garcia, V. (2015). Value Chain Analysis Of Agricultural Small Holders In Southern Shan State. Myanmar Institute for Integrated Development. Yangon.
3. Mercy Corps (2015). "What holds vegetable farmers back?": Conflict, Governance and Markets Assessment Making Vegetable Market work for Small Holders Program.
4. UNICEF. A Snap Shot of Child Wellbeing: Shan State.
5. UNDP (2012). Gender Analysis at Inn Thar, Pa-O, Da Nu and TaungYoe Villagers around Inle Lake. Myanmar.
6. ADB (2012). Poverty Analysis (Summary) : Interim Country Partnership Strategy, Myanmar. 2012-2014.

RADANAR AYAR
for the Rural People

June 2018